

**T-Hydro SOLUTION**

Gen. Variant: SDS\_US\_GHS

Version 1.1

Revision Date 02/18/2016

Print Date 04/26/2016

SDS No.: BE115

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name	: T-Hydro SOLUTION
CAS Number:	75-91-2
Chemical characterization	: Organic peroxides
Chemical name	: tert-Butyl Hydroperoxide
Synonyms	: TBHP, 1,1-Dimethylethyl Hydroperoxide, T-Butyl Hydroperoxide
Identified uses	: Use as intermediate; Polymer production
Prohibited uses	: Fumigants; Sterilants; Pesticides; Applications involving direct consumer exposure, cosmetics, toiletries, personal care products
Company	: Lyondell Chemical Company LyondellBasell Tower, Suite 300 1221 McKinney St. P.O. Box 2583 Houston Texas 77252-2583
Telephone	: Customer Service 888 777-0232 Product Safety 800 700-0946
Emergency telephone	: CHEMTREC USA 800-424-9300 LYONDELL 800-245-4532
E-mail address	product.safety@lyb.com

**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Flammable liquids	Category 3
Organic peroxides	Type F
Acute toxicity; Oral	Category 4
Acute toxicity; Inhalation	Category 2
Acute toxicity; Dermal	Category 3
Skin corrosion/irritation	Category 1C
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1A
Specific target organ systemic toxicity - single exposure	Category 3
Germ cell mutagenicity	Category 2
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2

GHS Classification Scale (1= severe hazard; 4= slight hazard)

**Label elements**

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**Hazard symbols** :**Signal Word** : Danger

**Hazard Statements** :

- H226 Flammable liquid and vapor.
- H242 Heating may cause a fire.
- H302 Harmful if swallowed.
- H330 Fatal if inhaled.
- H311 Toxic in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H335 May cause respiratory irritation.
- H341 Suspected of causing genetic defects.
- H411 Toxic to aquatic life with long lasting effects.

**Precautionary Statements****: Prevention**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P220 Keep/Store away from clothing/combustible materials.  
P234 Keep only in original container.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P273 Avoid release to the environment.

**Response**

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
P331 Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with

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water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P362 Take off contaminated clothing and wash before reuse.

P363 Wash contaminated clothing before reuse.

**Storage**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P410 Protect from sunlight.

P411 + P235 Store at temperatures not exceeding 38 °C/ 100 °F. Keep cool.

**Disposal**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

No additional information available.

**3. Composition/information on ingredients****Mixtures**

Chemical nature : Mixture

**Ingredients**

Chemical name	CAS-No.	Weight %
tert-Butyl hydroperoxide	75-91-2	69.0 - 71.0 %
Water	7732-18-5	29.0 - 31.0 %

**4. FIRST AID MEASURES**

General advice : Always observe self-protection methods  
Consult a physician/doctor if necessary.  
Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid.  
Show this material safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.

If inhaled : If swallowed or inhaled, remove from contaminated area. Apply artificial respiration if not breathing. Do not give direct mouth-to-mouth resuscitation. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.  
Do not leave the victim unattended.

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Keep patient warm and at rest.  
Immediately seek medical attention.  
If breathing is difficult, give oxygen.  
If unconscious place in recovery position and seek medical advice.

In case of skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.  
Immediately seek medical attention.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
Seek immediate medical attention, preferably an ophthalmologist.  
Continue rinsing eyes during transport to hospital.

If swallowed : Immediately seek medical attention.  
Clean mouth with water and drink afterwards plenty of water.  
DO NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If vomiting does occur, have victim lean forward to reduce risk of aspiration.  
Do not leave victim unattended.  
Keep patient warm and at rest.  
If unconscious place in recovery position and seek medical advice.  
If swallowed or inhaled, remove from contaminated area. Apply artificial respiration if not breathing. Do not give direct mouth-to-mouth resuscitation. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

**Notes to physician**

Symptoms : Complications of ingestion include ruptured viscus, coma, seizures and cardiac arrest.

Systemic poisoning with effects on CNS and blood are possible.  
corrosive effects

Hazards : Causes severe skin burns and eye damage.  
Fatal if inhaled.  
Harmful if swallowed.  
Toxic in contact with skin.  
May cause an allergic skin reaction.  
May cause respiratory irritation.

Treatment : Treat symptomatically.  
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

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**5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media : SMALL FIRE: Use dry chemicals, CO2, water spray or alcohol-resistant foam  
LARGE FIRE: Use water spray, water fog or alcohol-resistant foam
- Unsuitable extinguishing media : Do not use solid water stream.
- Specific hazards during fire fighting : Fire may produce irritating, corrosive and/or toxic gases. Vapor can burn in absence of air and may be flammable at either elevated temperature or reduced pressure. Fine sprays/mists may be combustible at temperatures below normal flash point. Heat can cause exothermic decomposition. When evaporated, residual liquid will concentrate in TBHP content and may reach explosive level (>90%). Burning material may release gases, rupture closed containers, spreading fire, increasing risk of burns/injuries. Availability of other combustibles may hasten burning, spreading fire. Run-off may create an explosion, fire, and environmental hazard. Flood fire area with water from a distance. Do not use straight streams. Move containers from fire area if it can be done without risk. Do not move cargo or vehicle if cargo has been exposed to heat. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Use water spray/fog for cooling. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Notify authorities immediately if liquid enters sewer/public waters.
- Special protective equipment for fire-fighters : Do not enter fire area without proper protection. Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighter's protective clothing will only provide limited protection.

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**6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions : Use personal protective equipment.  
Ensure adequate ventilation.  
Evacuate personnel to safe areas.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods for containment /  
Methods for cleaning up : Highly flammable liquid.  
Highly reactive material.  
Do not clean-up or dispose of, except under supervision of a specialist.  
Extinguish all ignition sources.  
Release can cause fire/explosion/health/environmental hazards.  
Liquids or vapors may ignite/react with other materials.  
Evacuate/limit access.  
Keep combustibles (wood, paper, oil, etc) away from spilled material.  
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.  
Keep substance wet using water spray.  
Stop leak if you can do it without risk.  
Take up small spills with inert, damp, noncombustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal.  
For large spills:  
Wet down with water and dike for later disposal.  
Prevent entry into waterways, sewers, basements or confined areas.

**SECTION 7. HANDLING AND STORAGE****Handling**

- Advice on safe handling : For industrial use only.  
Closed containers may generate internal gas pressure by decomposition (oxygen) which can accelerate burning of combustibles.  
Overpressure may rupture container/cause serious injury/result in or accelerate fire.  
Provide nitrogen pad to dilute any free oxygen buildup and prevent any hydroperoxide self-combustion.  
Use only non-sparking tools.

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Properly ground containers before beginning transfer.  
All equipment must conform to applicable electrical code.  
Minimize formation of sprays during transfer.  
Inspect frequently to identify bulging or leaking containers.  
Isolate/depressure if safe to do so.  
Do not steam purge systems containing this material until they have been properly flushed with a suitable material such as mineral oil, kerosene, TBA, etc - depending on system compatibility.  
Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair.  
Extinguish all ignition sources.  
Check atmosphere for explosiveness and oxygen deficiencies.  
Wear recommended personal protective equipment.  
Observe precautions pertaining to confined space entry.

Advice on protection against fire and explosion

: Avoid formation of aerosol.  
Keep away from sources of ignition - No smoking.  
Take measures to prevent the build up of electrostatic charge.  
Keep away from combustible material.

**Storage**

Requirements for storage areas and containers

: Keep away from open flames, hot surfaces and sources of ignition.  
Keep away from reducing agents.  
Protect from contamination.  
Store so fire extinguishing media can be applied to all containers from a safe distance/protected location.  
Store between 50-100°F (10-38°C).  
Suitable container and packaging materials for safe storage:  
Stainless steel  
or  
Plastic container of HDPE  
Unsuitable materials for containers:  
Carbon steel  
Mild steel

**8. Exposure controls/personal protection****Control parameters****Ingredients with workplace control parameters**

Consult local authorities for acceptable exposure limits.

**Exposure controls****Engineering measures**

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Electrical equipment should be grounded and conform to applicable electrical code.  
Provide local exhaust or general room ventilation to minimize exposure to vapors.  
Both local exhaust and good general room ventilation must be provided not only to control exposure but also to prevent formation of flammable mixtures.

**Personal protective equipment**

- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hand protection : Wear chemical resistant gloves such as:  
Solvent-resistant gloves  
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.  
Before removing gloves clean them with soap and water.
- Eye and face protection : Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to splashing/spraying liquid, airborne particles, or vapor.
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.  
Use PPE that is chemical resistant to the product and prevents skin contact.  
Fire retardant clothing is appropriate for routine occupational use.  
The equipment must be cleaned thoroughly after each use.
- Hygiene measures : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use.  
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.  
Use good personal hygiene practices.  
Wash hands before eating, drinking, smoking, or using toilet facilities.  
Take off contaminated clothing and wash before reuse.  
Avoid contact with skin, eyes and clothing.  
When using do not eat, drink or smoke.  
Wash hands before breaks and immediately after handling the product.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : liquid  
Color : Clear, colorless.



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Odor	: pungent odor
Odor Threshold	: ~ 1 ppm Odor is not an adequate warning of potentially hazardous ambient air concentrations.
Flash point	: 38 °C at 1013.0 hPa (759.8 mm Hg) Method: closed cup
Lower explosion limit	: ~ 5.7 vol%
Upper explosion limit	: ~ 99.99 vol%
Oxidizing properties	: Oxidizer.
Autoignition temperature	: ~ 238 °C
Decomposition temperature	: not determined
pH	: ~ 4.3
Freezing point	: -3 °C at 1,013 hPa
Boiling point/boiling range	: 96 °C at 1,013 hPa
Vapor pressure	: 50.8 hPa at 25 °C
Density	: ~ 0.93 g/cm <sup>3</sup> at 25 °C
Water solubility	: Soluble in water.
Partition coefficient: n-octanol/water	: at 20 °C Log Kow = 0.85
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: 4.42 mm <sup>2</sup> /s at 25 °C  2.45 mm <sup>2</sup> /s at 40 °C
Relative vapor density	: ~ 3.1 at 15 - 20 °C (Air = 1.0)
Surface tension	: 69.9 mN/m

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1.05 g/l  
at 20 °C

Explosive properties : Not explosive

Other Information : Volatile Characteristics:, Slight: 0.1 to 1.0%, Additional properties may be listed in Sections 2 and 5.

**SECTION 10. STABILITY AND REACTIVITY**Reactivity : Will not occur.  
Self-reactive substances and mixtures

Chemical stability : Stable under recommended storage conditions.

Conditions to avoid : Prolonged exposure to heat, fire, or any conditions which would concentrate the liquid.

Materials to avoid : Metal compounds.  
Oxidizable materials.  
Reducing agents.  
Sulfur compounds.  
Ketones.

Hazardous decomposition products : Not expected to decompose under normal conditions.

Thermal decomposition : Thermal decomposition may produce carbon monoxide and other toxic vapors., High temperatures/chemical contamination can liberate gaseous oxygen causing hazardous pressure build-up., Incomplete combustion can result in the production of carbon monoxide, carbon dioxide and other toxic gases.

Hazardous reactions : Vapors may form explosive mixture with air.  
Self-reactive substances and mixtures**SECTION 11. TOXICOLOGICAL INFORMATION****Product Summary** : The below given information is based on the assessment of the product including impurities.**Acute toxicity****Acute oral toxicity** : Classified  
Harmful if swallowed.

: Ingestion may result in severe discomfort, pronounced gastrointestinal irritation and internal bleeding.

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- : LD50: 560 mg/kg  
Species: Rat
- Acute inhalation toxicity** : Classified  
Fatal if inhaled.
- : Exposure to vapor/aerosol may cause marked irritation of the eyes and respiratory tract.
- : LC50: 1.85 mg/l  
Exposure time: 4 HOURS  
Species: Rat
- Acute dermal toxicity** : Classified  
Toxic in contact with skin.
- : Dermal absorption is possible if the barrier function of the skin is compromised (for example due to severe irritation), with animal studies identifying cyanosis, ataxia and lethargy as possible side-effects.
- : LD50: 440 mg/kg  
Species: Rabbit
- Skin corrosion/irritation** : Classified  
Causes severe skin burns.
- : Skin contact with concentrated product may result in irritation, redness and swelling, with bleeding and chemical burns possible if contact is prolonged. Dermal absorption is possible if the barrier function of the skin is compromised (for example due to severe irritation), with animal studies identifying cyanosis, ataxia and lethargy as possible side-effects.
- Serious eye damage/eye irritation** : Classified  
Causes serious eye damage.
- Respiratory or skin sensitization** : Respiratory sensitization  
Not classified  
No study available.
- : Skin sensitization  
Classified  
May cause allergic skin reaction.

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**Chronic toxicity**

**Carcinogenicity** : Not classified  
Contains a substance that has a positive carcinogenicity study.  
The weight of evidence for the carcinogenicity of this substance does not meet the criteria for classification.

**Germ cell mutagenicity** : Classified  
Suspected of causing genetic defects.

**Reproductive toxicity**

**Effects on fertility /  
Effects on or via lactation** : Not classified  
No adverse effect observed.

**Effects on Development** : Not classified  
No adverse effect observed.

**Target Organ Systemic  
Toxicant - Single exposure** : Classified, May cause respiratory irritation.

**Target Organ Systemic  
Toxicant - Repeated  
exposure** : Based on repeated exposure toxicity values, not classified.

: Classified, Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard** : Based on physico-chemical values or lack of human evidence, not classified.

**12. ECOLOGICAL INFORMATION****Ecotoxicology Assessment**

**Acute aquatic toxicity** : Classified  
Toxic to aquatic life.

**Chronic aquatic toxicity** : Classified  
Toxic to aquatic life with long lasting effects.  
Based on acute test data and lack of biodegradation

**Toxicity to fish** :

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Harmful to fish.

: LC50: 42.3 mg/l  
Exposure time: 96 HOURS  
Species: Pimephales promelas (fathead minnow)

**Toxicity to daphnia and other aquatic invertebrates**

: Harmful to aquatic organisms.

: EC50: 20 mg/l  
Exposure time: 48 HOURS  
Species: Daphnia magna (Water flea)  
Immobilization

**Toxicity to algae**

: Toxic to algae.

: EC50: 2.1 mg/l  
Exposure time: 72 HOURS  
Species: Selenastrum capricornutum (green algae)  
Growth inhibition

**Toxicity to bacteria**

: Toxic to sewage treatment plant microorganisms

: EC50: 24.3 mg/l  
Exposure time: 30 min  
Species: Activated sludge  
Respiration inhibition

**Toxicity to fish (Chronic toxicity)**

: no data available

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**

: no data available

**Persistence and degradability****Biodegradability**

: 0 %  
Not readily biodegradable.  
(After 28 days in a ready biodegradability test)

**Bioaccumulative potential****Bioaccumulation**

: This material is not expected to bioaccumulate.

**Mobility in soil****Surface tension**

: 69.9 mN/m  
1.05g/l  
at 20 °C

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**Distribution among environmental compartments**

: Stability in water  
Hydrolytically stable.  
Half-life >1 year

: Stability in soil  
no data available

**Additional advice  
Environmental fate and pathways**

: No additional information available.

**Results of PBT and vPvB assessment**

Not applicable.

**Other adverse effects****Additional ecological information**

: No additional information available.

**SECTION 13. DISPOSAL CONSIDERATIONS****Further information**

: Contaminated product/soil/water containing un-decomposed reactive components may be U.S. Resource Conservation and Recovery Act (RCRA)/U.S. Occupational Safety and Health Administration (OSHA) hazardous waste. (See 40 U.S. Code of Federal Regulations (CFR) 261 and 29 CFR 1910).  
Waste may be designated D003 under U.S. Resource Conservation and Recovery Act (RCRA) listings.  
Empty containers which have not been properly decontaminated should be designated U.S. Resource Conservation and Recovery Act (RCRA) hazardous waste number D001 (ignitable).  
Landfill solids at permitted sites.  
Use registered transporters.  
Concentrated liquid waste may be reacted harmlessly by combining with dilute (less than 10%) sodium bisulfite (reducing agent) and alkali solution/mixing thoroughly until reaction heat dissipates.  
Resulting solution may be biologically treatable.  
Assure effluent complies with applicable regulations.

**Contaminated packaging**

: Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty drum.

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**SECTION 14. TRANSPORT INFORMATION****CFR\_ ROAD**

UN number : 3109  
Description of the goods : Organic peroxide type F, liquid  
(TERT-BUTYL HYDROPEROXIDE <=70% IN WATER)  
Class : 5.2  
Subsidiary hazard class : 8, 3  
Packing group : II  
Labels : 5.2 (8)

**CFR\_ RAIL**

UN number : 3109  
Description of the goods : Organic peroxide type F, liquid  
(TERT-BUTYL HYDROPEROXIDE <=70% IN WATER)  
Class : 5.2  
Subsidiary hazard class : 8, 3  
Packing group : II  
Labels : 5.2 (8)

**IMDG**

UN number : 3109  
Description of the goods : ORGANIC PEROXIDE TYPE F, LIQUID  
(TERT-BUTYL HYDROPEROXIDE <=70% IN WATER)  
Class : 5.2  
Subsidiary hazard class : 8  
Labels : 5.2 (8)  
EmS Number 1 : F-J  
EmS Number 2 : S-R  
  
Marine pollutant : yes  
TERT-BUTYL HYDROPEROXIDE <=70% IN WATER  
Environmentally hazardous : yes  
TERT-BUTYL HYDROPEROXIDE <=70% IN WATER  
Toxic to the Aquatic Environment Mark Required

**SECTION 15. REGULATORY INFORMATION**

If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

**SARA 302/304**

This product contains no known chemicals regulated under SARA 302/304.

**SARA 311/312**

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

Fire Hazard.

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**SARA 311/312**

Reactive Hazard

Immediate (Acute) Health Hazard.

Delayed (Chronic) Health Hazard.

**SARA 313**

This product contains no known chemicals regulated under SARA 313.

**State Reporting**

This material is not known to contain a chemical substance known to the State of California to cause cancer, reproductive, or developmental toxicity under California Proposition 65. However, LyondellBasell has not tested for the presence of listed chemical substances.

This product contains the following chemicals regulated by New Jersey's Worker and Community Right to Know Act:

75-91-2      tert-Butyl hydroperoxide

This product contains the following chemicals regulated by Massachusetts' Right to Know Law:

75-91-2      tert-Butyl hydroperoxide

This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

75-91-2      tert-Butyl hydroperoxide

**Other international regulations****Global Inventory Status**

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

\*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant
Taiwan	TCSCA	Compliant

**REACH status**

If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that all substances in this preparation have been pre-registered or, where required under REACH, registered, and that we have the intention to proceed with their registration in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006)



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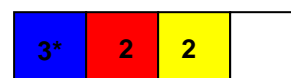
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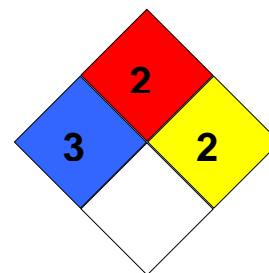
Contact [product.safety@lyb.com](mailto:product.safety@lyb.com) for additional global inventory information.

**SECTION 16. OTHER INFORMATION****Further information****HMIS Classification**

: Health Hazard: 3  
Chronic Health Hazard: \*  
Flammability: 2  
Physical hazards: 2

**NFPA Classification**

: Health Hazard: 3  
Fire Hazard: 2  
Instability: 2

**Other Information**

HMIS rating scale (0 = minimal hazard; 4 = severe hazard)

NFPA rating scale (0 = minimal hazard; 4 = severe hazard)

**Material safety datasheet sections which have been updated:**

Revised Section(s): 1 2 3 4 10 11 Revision Date February 18 2016

**Disclaimer**

This document is generated for the purpose of distributing health, safety, and environmental data.

Information is correct to the best of our knowledge at the date of the SDS publication.

It is not a specification sheet nor should any displayed data be construed as a specification.

Before using a product sold by a company of the LyondellBasell family of companies, users should make their own independent determination that the product is suitable for the intended use and can be used safely and legally.

SELLER MAKES NO WARRANTY; EXPRESS OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY) OTHER THAN AS SEPARATELY AGREED TO BY THE PARTIES IN A CONTRACT.

Users should review the applicable Safety Data Sheet before handling the product.

This product(s) may not be used in the manufacture of any of the following, without prior written approval by Seller for each specific product and application:

(i) U.S. FDA Class I or II Medical Devices; Health Canada Class I, II or III Medical Devices;

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**Disclaimer**

European Union Class I or II Medical Devices;

(ii) film, overwrap and/or product packaging that is considered a part or component of one of the aforementioned medical devices;

(iii) packaging in direct contact with a pharmaceutical active ingredient and/or dosage form that is intended for inhalation, injection, intravenous, nasal, ophthalmic (eye), digestive, or topical (skin) administration;

(iv) tobacco related products and applications, electronic cigarettes and similar devices.

The product(s) may not be used in:

(i) U.S. FDA Class III Medical Devices; Health Canada Class IV Medical Devices; European Class III Medical Devices;

(ii) applications involving permanent implantation into the body;

(iii) life-sustaining medical applications.

All references to U.S. FDA, Health Canada, and European Union regulations include another country's equivalent regulatory classification.

In addition to the above, LyondellBasell may further prohibit or restrict the use of its products in certain applications. For further information, please contact a LyondellBasell representative.

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